



# CENTRAL PACIFIC HURRICANE CENTER TROPICAL CYCLONE REPORT

## TROPICAL CYCLONES 1972

### Central Pacific Hurricane Center

The tropical cyclone summaries for the years between 1832 and 1979 were taken from A History of Tropical Cyclones In the Central North Pacific and the Hawaiian Islands 1832-1979. This Department of Commerce publication was printed in 1981 and authored by Samuel Shaw of the Central Pacific Hurricane Center (CPHC) and the National Weather Service Forecast Office in Honolulu, Hawaii.

A total of seven tropical cyclones entered or formed in the Central Pacific Hurricane Center's area of responsibility during 1972. In 1972 there were 30 named tropical cyclones of which 22 attained typhoon intensity, in the Western North Pacific. There were only 12 named cyclones in the Eastern North Pacific that year, slightly below the 1966-72 annual average of 15.

The equatorial trough was quite pronounced over the North Pacific during the summer and fall of 1972. Low-level monsoon westerlies (Ramage, 1974) extended from Southeast Asia across equatorial latitudes into the Central North Pacific. Sadler (1972) indicated this anomalous circulation pattern to be associated with large-scale ocean warming and the early beginning of a strong "El Nino". The 1972-73 "El Nino" cycle which began in March of that year (Ramage, 1975) had by fall reached such intensity that it was already equivalent to the great ones of 1891, 1925, 1941, 1957-58 and 1965. August sea surface temperatures at Canton Island were 2.2C above normal, sea surface temperatures off Peru were 5C above normal, and the surface winds at Tarawa Island (1.4N 173.2E) had been prevailing westerly since September 1.

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## AUGUST 2-22, 1972 (HURRICANE CELESTE)

A tropical disturbance about 450 nautical miles south of LaPaz, Mexico on the 2nd moved westward and stalled near 15N 120W on the 4th. It developed gradually into a tropical storm by the 6th near where it had stalled and then moved slowly westward. There were no ship reports nearby when the vessel WGBC about 90 nautical miles south of the center indicated westerly winds of 20 knots and a pressure of 1006.4 mb (29.72"). Ships then remained well clear of the storm, now named CELESTE, until 08/1800Z when the SANTA ISABEL MARU passed 150 nautical miles southeast of the center.

A radio telephone call from the STAR TRACK estimated 80-90 knot winds near 16N 123W at 09/0054Z. During the rapid development to hurricane intensity a 117-foot, three-masted, square-rigged sailing vessel, the REGINA MARIS, with 53 persons aboard, became involved in the storm and was damaged by high winds and rough seas. It began taking on 2,000 gallons of water an hour and issued a distress call. A U.S. Air Force reconnaissance aircraft on a mission to the hurricane was alerted to the distressed vessel. That aircraft found it some distance from its estimated position, guided a rescue aircraft to the ship, and then continued on its mission. The VISHEA TRUTH reached the sailing vessel and took it in tow until the USCGC MELLON took over late on the 13th. Rescue and towing operations were complicated by the after effects of CELESTE and the effects of Hurricane DIANA, which followed 1000 nautical miles and 4 days after CELESTE.

Hurricane CELESTE crossed 140W at 14N about 12/0900Z. For the next 2 days it moved west-southwestward about 10 knots. The storm passed south of the Hawaiian Islands on the 15th. The closest point of approach, at 16/0600Z, was 380 nautical miles south-southwest of South Point on the island of Hawaii. Fifteen foot surf pounded the Puna, Kau, and South Kona coasts of the Big Island.

By this time CELESTE had gradually turned to a west-northwesterly course and was headed directly for Johnston Island—a small, low-lying atoll, with an area of about one square mile and highest elevation of less than 20 feet above sea level. Extended (72-hour) forecasts provided ample opportunity for precautionary measures to be taken at Johnston. Later, the forecast for CELESTE to pass close to Johnston caused the Air Force to evacuate the entire population of about 500 military and civilian personnel the day before the hurricane struck, as a precaution against the possible escape of stored toxic gases.

On the morning of the 19th northerly hurricane-force winds raked Johnston for several hours as CELESTE's center passed about 25 nautical miles to the northeast. Details on the type, extent and dollar value of damage to the military facilities are not available, although the north and northwest sides of the structures appeared to have been sandblasted by blown sand and coral. Intensive preparation for the storm and the center passing north of the island no doubt caused damage to be relatively light. Fears that waves might inundate the atoll did not materialize, partly because of the protection afforded by extensive reefs and large deposits of dredging spoil which lie offshore to the north and northeast of the island.

The Johnston weather station lost about a third of its roof and ceiling tiles, but interiors and equipment were virtually unscathed. Weather instruments that remained in operation throughout the storm recorded the following:

1. A fastest mile of 105 miles an hour (statute) from the northwest at 7:59 a.m. on the 19th- -the greatest in 13 years of record and much above the previous maximum of 49 miles an hour observed in November 1959 and again in March 1964. The gust recorder was inoperative.
2. Gale force winds, from 11:18 p.m. on the 18th to 11:47 a.m. on the 19th.
3. Hurricane-force winds from 3:54 a.m. to 9:18 a.m. on the 19th.
4. A minimum sea-level pressure of 29.04 inches (983.4 mb) at 11:58 a.m. on the 19th. This compares with the previous minimum of 29.58 inches (1001.7 mb).
5. A total rainfall of 6.21 inches was measured in the catch basin of the tipping bucket weighing gage. However, this may be an underestimate, since the funnel of the gage was partially plugged with coral.

Immediately after passing north of Johnston, CELESTE took a sharp turn to a due northward course and began to weaken. Nevertheless, at 21/0600Z the AMERICAN LANCER only about 20 nautical miles north of the center was pounded by 55-knot gales, heavy rain which reduced the visibility to 1/2 mile and seas of 10 feet.

CELESTE was downgraded to a tropical storm by 22/1200Z near 21N 172W and rapidly dissipated thereafter due to unidirectional vertical wind shear.

1972: Hurricane Celeste					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
08/12/0600	15.0	139.3		85	Hurricane Cat. 2
08/12/1200	14.0	140.2		95	"
08/12/1800	13.7	141.8		85	"
08/13/0000	13.4	142.9		80	Hurricane Cat. 1
08/13/0600	13.0	144.2		80	"
08/13/1200	12.7	145.7		90	Hurricane Cat. 2
08/13/1800	12.6	147.0		90	"
08/14/0000	12.6	148.0	967	95	"

08/14/0600	12.5	149.6		100	Hurricane Cat. 3
08/14/1200	12.5	151.0		100	"
08/14/1800	12.4	151.7		100	"
08/15/0000	12.5	152.6		100	"
08/15/0600	12.5	153.9		100	"
08/15/1200	12.8	154.6		100	"
08/15/1800	12.9	155.8		90	Hurricane Cat. 2
08/16/0000	13.4	156.7		90	"
08/16/0600	13.7	158.0		90	"
08/16/1200	14.0	159.0		85	"
08/16/1800	14.3	159.8		75	Hurricane Cat. 1
08/17/0000	14.5	160.4		70	"
08/17/0600	14.7	161.2		70	"
08/17/1200	15.0	162.0		75	"
08/17/1800	15.0	162.9		80	"
08/18/0000	15.1	163.6	952	85	Hurricane Cat. 2
08/18/0600	15.3	164.5		85	"
08/18/1200	15.4	165.3		90	"
08/18/1800	15.5	166.5		90	"
08/19/0000	15.6	167.0		95	"
08/19/0600	15.7	167.7	943	100	Hurricane Cat. 3
08/19/1200	16.1	168.1		100	"
08/19/1800	16.5	168.5		110	"
08/20/0000	17.2	169.2		110	"

08/20/0600	17.8	169.5		100	"
08/20/1200	18.6	169.7		90	Hurricane Cat. 2
08/20/1800	19.0	170.0		80	Hurricane Cat. 1
08/21/0000	19.5	170.3	981	75	"
08/21/0600	20.6	170.6		65	"
08/21/1200	20.9	171.1		55	Tropical Storm
08/21/1800	21.2	171.6		45	"
08/22/0000	21.5	172.8		40	"
08/22/0600	21.9	173.5		35	"

## AUGUST 8-20, 1972 (HURRICANE DIANA)

DIANA began developing in the wake of CELESTE on the 8th. A circulation was first indicated in satellite pictures near 9N 114W at 10/1800Z. Squalls and showers extended out 300 nautical miles from the center. Winds of 20 knots or less were reported 200-500 nautical miles from the center by the SANTA ISABEL MARU, CONON FOREST, and the STEEL ADVOCATE. The CONON FOREST, north of and converging with the storm, altered her course on the night of the 10th. She then sailed parallel to and at nearly the same speed as the storm, which increased to hurricane intensity on the night of the 12th near 13N 124W, remaining in its vicinity until the 18th. The VISHEA TRUTH (VWWT), towing the REGINA MARIS which had been disabled by hurricane CELESTE, was headed northeast ahead of the storm in 30-40 knot winds to rendezvous with the USCGC MELLON near 17N 126W on the night of the 12th. The hurricane center was then about 120 nautical miles to the south. The tow was transferred in strong winds and high seas, and the MELLON, bucking winds of 35-50 knots, headed northeast and east away from the storm. During the night of the 13th an Air France aircraft, on a flight from Los Angeles to Tahiti, encountered part of the storm at 18N 129W and diverted to the east of its normal flight path.

Reconnaissance on the 14th showed no change in either central pressure or maximum wind. On the 15th, Air Force reconnaissance reported DIANA had weakened somewhat. The central surface pressure had risen to 982 mb (29.0011) and maximum surface winds had diminished to 55 knots, causing DIANA to be downgraded to a tropical storm. At this point DIANA also changed course from a northwesterly heading to the west and increased forward speed to 16 knots. The next three reconnaissance observations on the 17th and 18th gave no reports on minimum surface pressure, but all reported maximum surface winds of 45-55 knots with no changes in storm characteristics.

Until 18/1800Z DIANA moved on a steady westerly course at an average speed of 16 knots. At this time the center was 300 nautical miles east of the island of Hawaii and the storm center was forecast to pass very near the southernmost point of the island on the 18th. Early on the 18th, Air Force reconnaissance located the center north of the predicted path and a sharp change in both course and speed of DIANA was in progress. A tropical storm warning advisory was then issued stating the storm would pass north of Hawaii. Reconnaissance on the 19th indicated further slowing and curvature to the north. A reported central pressure of 987 mb (29.15") with maximum sustained surface winds of 50 knots indicated slow weakening.

On the morning of the 20th a reconnaissance aircraft located the center of DIANA 30 nautical miles north of the island of Maui with a minimum surface pressure of 1005 mb (29.68") and, maximum surface winds of 25 knots. DIANA's career was nearly over. DIANA did manage to cause some damage, however. On the morning of the 18th, surf estimated to be 30 feet in height struck Hawaii Island's Puna coast at Kalapana, Kapoho Beach lots and Kapoho Vacationland. At Vacationland, which was most severely hit, the surf swept four homes off their foundations, extensively damaged one of them, flooded another home, washed rocks and debris inland and eroded 200 feet of a private road. Tides at Hilo Harbor rose 4 to 5 feet above normal beginning about 8 a.m. and lasted throughout the day. Although there were no floods, rainfall was heavy over most of the eastern side of the Big Island with pockets of very heavy rainfall. Ten inches fell in a small area northeast of Hilo and 8 inches fell in the Punaluu area southwest of Hilo.

On Maui the only reported storm damage was the erosion of some sand from Hanoa Beach on the eastern shore by surf of short duration estimated up to 20 feet high. One area along the northeast coast received up to 6 inches of rain during DIANA's close approach.

1972: Hurricane Diana					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
08/16/1200	18.5	140.4		55	Tropical Storm
08/16/1800	18.3	142.0		55	"
08/17/0000	18.2	143.5		55	"
08/17/0600	18.3	145.1		55	"
08/17/1200	18.4	146.8		55	"
08/17/1800	18.4	148.8		55	"
08/18/0000	18.4	149.9		55	"

08/18/0600	18.5	151.1		55	"
08/18/1200	18.6	151.9		55	"
08/18/1800	18.9	152.7		50	"
08/19/0000	19.3	153.3		50	"
08/19/0600	19.8	153.8	987	45	"
08/19/1200	20.2	154.1		45	"
08/19/1800	20.4	154.3		50	"
08/20/0000	20.5	154.5	982	50	"
08/20/0600	20.7	154.8		50	"
08/20/1200	21.0	155.3		35	"
08/20/1800	21.3	156.1	1005	25	Tropical Depression

## AUGUST 18 - SEPTEMBER 3, 1972 (HURRICANE FERNANDA)

An area of cloudiness about 500 nautical miles south of Manzanillo, Mexico on the 18th developed rapidly into tropical storm FERNANDA on the 19th. The FERNFIELD, 200 nautical miles east of the center, reported a southerly 25-knot wind; the long period swells reported were also from the south, indicating a recent development. As the FERNFIELD sailed northeastward, she encountered heavy rains while the wind backed to southeast. The GREEN WAVE and UQRT were ahead of and outrunning the storm. The FILEFJELL, originally heading southeastward, altered her course to the north as winds increased to 40 knots 680 nautical miles northeast of the center by 21/1800Z, near 12N 110W. After sailing south of DIANA on the night of the 16th the WONOSARI continued eastward to the Panama Canal. She crossed 250 nautical miles south of hurricane ESTELLE during the night of the 19th and headed for an intercept with FERNANDA in a little over two days. She then altered course to the southeast late on the 21st as FERNANDA continued to intensify. The WONOSARI passed within 150 nautical miles of FERNANDA as the storm became a hurricane at 22/0000Z, but reported only 20-knot winds.

FERNANDA then continued as a hurricane on a west-northwestward course, developing 90-knot winds late on the 23rd and 100-knot winds that night.. The HOSELSTEIN, 200 nautical miles southwest of the center when reporting 45-knot winds, and the BOGOTA, STEEL APPRENTICE, MOHAWK, THOR I, BANASOL, HONGKONG BEAR, and BRANDFORD ISLAND were all in the vicinity of the hurricane, between the 23rd and 24th. The strongest wind reported by a vessel was 52 knots by the EASTERN GLORY on the 24th, 125 nautical miles west-north west of the hurricane, then centered near 18N 127W.

FERNANDA weakened to a tropical storm on the morning of the 27th and crossed 140W near 20N during the afternoon of the 27th with 50-knot winds. It maintained these winds until it reached a point 150 nautical miles northeast of the northeast coast of the Big Island on the 29th. FERNANDA then weakened quite rapidly while moving northwestward parallel to the State, passing about 200 nautical miles north of Kauai on September 1 with winds of less than 25 kts. The vortical remnant of FERNANDA was last located at 31N 175W on September 3.

A flash flood on Waipio stream from rains in Hawaii Island's Kohala mountains on August 31 may be attributed to the nearby presence of FERNANDA.

1972: Hurricane Fernanda					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
08/27/0000	19.9	140.7		45	Tropical Storm
08/27/0600	19.9	142.2		45	"
08/27/1200	19.9	143.7		45	"
08/27/1800	20.2	145.2		45	"
08/28/0000	20.6	146.5		45	"
08/28/0600	20.7	147.4		40	"
08/28/1200	20.9	148.1		40	"
08/28/1800	21.2	148.8		40	"
08/29/0000	21.4	149.7		40	"
08/29/0600	21.4	150.5		40	"
08/29/1200	21.5	151.2		40	"
08/29/1800	21.6	151.9	998	40	"
08/30/0000	21.8	152.5		40	"
08/30/0600	22.3	153.0		40	"
08/30/1200	22.8	153.7		40	"
08/30/1800	23.4	154.1	1013	40	"

08/31/0000	24.0	154.5		40	"
08/31/0600	24.5	155.2		35	"
08/31/1200	25.1	155.7		35	"
08/31/1800	25.6	156.4		35	"

## SEPTEMBER 24-28, 1972 (TROPICAL STORM JUNE)

Short-lived Tropical Storm JUNE began as a weak disturbance in a very active Intertropical Convergence Zone near 9N 157W, about 600 miles south-southwest of Hawaii Island. It moved northwestward, and was classified as a tropical storm by 26/1800Z at 14.2N 166.0 W. Maximum sustained surface winds were estimated 50 knots with gusts to 80 knots.

JUNE continued northwestward directly toward Johnston Island, only 5 weeks after hurricane CELESTE had struck there. It passed within 50 miles south and west of Johnston on the morning of the 27th, but was too small and weak to do any damage. The peak gust recorded at the Johnston weather station was 42 knots, there was no significant physical damage to installations on the island, and related precipitation amounted to less than 1/2 inch.

The storm then turned westward and quickly weakened.

1972: Tropical Storm June					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
09/26/1900	14.2	166.0		50	Tropical Storm
09/27/0000	14.8	166.5		50	"
09/27/0600	14.8	166.5		50	"
09/27/1200	14.8	166.5		50	"
09/27/1800	16.4	169.2		35	"
09/28/0000	16.8	170.3		30	Tropical Depression

## SEPTEMBER 28 - OCTOBER 3, 1972 (UNNAMED TROPICAL DEPRESSION)

The next Central North Pacific tropical cyclone of the 1972 season was a depression that formed near 16N 130W on September 28. Its formation and subsequent westward movement were documented on ATS-1 and ESSA-9 satellite photographs.

The last discernible cloud shield remnant associated with the depression was centered near 16.2N 156.0W, about 150 nautical miles south of South Point, Hawaii, on the afternoon of October 3. Up to 10-1/2 inches of rain fell on the eastern slopes of Mauna Kea and Mauna Loa on the Big Island within a few hours during that afternoon.

## OCTOBER 16-29, 1972 (TYPHOON OLGA)

A twin tropical cyclone system, one developing in the northern hemisphere and another in the southern hemisphere, became apparent in satellite photographs on the 16th near 175W. The northern system, destined to be OLGA, was first designated a tropical disturbance near 6N 173W at 16/1200Z. At 18/00006 it was classified by JTWC as a tropical depression at 70N 179W. The depression crossed the International Date Line at 7N on the 19th on a west-northwestward track and attained tropical storm intensity on the 20th. OLGA, described by reconnaissance aircraft as a strong tropical storm, showed little change in intensity as it moved through the northern Marshall Islands. The strongest winds were in the storm's northern semicircle and maximum sustained winds reported in the Marshalls were only 25 knots.

OLGA intensified to typhoon strength on the 25th and continued to develop as it swept through the northern Marianas. However, typhoon MARIE had destroyed most of the agricultural crops and coconut trees in those islands a few weeks earlier so damage attributed to OLGA was minimal.

OLGA recurved into a strong southwesterly flow ahead of a deepening trough over the East China Sea on the 28th, accelerated northeastward, and finally merged with a front east of Honshu late on the 29th.

OLGA's twin in the southern hemisphere became hurricane BEBE, a monster which at one time packed winds estimated at 170 m.p.h. and which wreaked much destruction on the Ellice and Fiji Islands.

## NOVEMBER 7-20, 1972 (TYPHOON RUBY)

RUBY was the first Western North Pacific typhoon to reach typhoon intensity in the Central North Pacific and cross the International Date Line since typhoon SARAH in September 1967. Satellite pictures revealed an area of enhanced convection in the ITCZ south of the Hawaiian Islands near 3N 159W on November 7. No organized circulation could be discerned until the 10th when the system began to drift northward. Satellite pictures indicated that winds had reached tropical storm strength by the 13th. The system apparently reached typhoon intensity when crossing the International Date Line at 12N as it took a more westerly heading. The first aircraft reconnaissance of the system at 14/1200Z positioned it at 12.3N 178.4E with maximum sustained surface winds of 65 knots.

With a mid-tropospheric anticyclone located between Midway and Wake Islands, RUBY moved west-northwestward at 9-12 knots for the next 3 days. Peak intensity was reached east of Taongi Atoll (the northernmost atoll of the Marshall Islands group) on the 16th as

reconnaissance aircraft observed a central surface pressure of 944 mb (27.88") and maximum winds of 110 knots.

Although RUBY's central pressure had risen rapidly to 983 mb (29.03") by the morning of the 17th, reconnaissance aircraft observed 100-knot winds in a small band north of the center. This observed wind was high in comparison with the Takahashi standard pressure-wind relationship in use at JTWC at this time.

RUBY passed 200 nautical miles south of Wake Island on the 17th as a minimal typhoon and then headed west-southwestward. While on this course, RUBY moved beneath upper tropospheric westerlies and continued to weaken. On the 18th satellite pictures showed the cirrus canopy removed from the center and by late on the 19th Ruby finally dissipated east of the northern Marianas on the 21st near 17.2N 154.4E midway between Wake Island and Guam.

1972: Hurricane Ruby					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
11/14/0600	12.0	179.7		70	Hurricane